

EPSON IC WITH VOICE/AUDIO PLAY FUNCTION SUPPORTS 12 LANGUAGES

– Epson provides voice/audio data PC tool for Epson ICs in an expanded range of languages –

Seiko Epson Corporation (TSE: 6724, "Epson") announce today availability of ESPER2 Voice Data Creation PC Tool to create high-quality voice data for an expanded range of languages supported by an Epson 32-bit ARM® Cortex®-M0+ processor and dedicated Speech IC`s. ESPER2 Voice Data Creation PC Tool is compatible with Epson`s S1C31D50 (32-bit ARM® Cortex®-M0+ MCU with integrated hardware sound processor) and S1V3G340 (Audio playback IC). S1C31D50 could be used as Host Voice/Audio single chip solution while S1V3G340 Speech IC would be a perfect HMI solution for existing designs where Host MCU cannot be changed for whatever reason (e.g. if effort is too high and too expensive to change MCU etc.). Embedded Voice/Audio hardware processor in S1C31D50 play voice/audio data just by setting functions and commands without CPU resources.

S1C31D50 and S1V3G340 supported already four languages by ESPER2 Voice Data Creation PC Tool (American English, Chinese, Japanese and Korean). Now also additional eight languages (American Spanish, British English, Canadian French, French, German, Italian, Russian and Spanish) are supported which is very useful for European market.

Voice guidance has become more and more a useful feature in items like home automation, health and fitness equipment, alarms in buildings and factories, elevators, toys, supporting all service related functions of systems, museum guidance equipment`s, all equipment`s used by blind or elder people where an acoustic feedback from a product is an important feature and many other applications too. Epson`s existing S1C31D50 and dedicated speech IC`s have been optimized for these applications. By providing the new software tool, Epson motivate developers of devices for applications mention above to make products easily multilingual.

In the past booking a studio and a narrator to create Voice/Audio data was required, but when using Epson ESPER2 Voice Data Creation PC Tool, studio recording can be avoided. This took time and is expensive too. Another benefit to work with ESPER2 Voice Data Creation PC Tool is to use 2-channel sound mixing function very easy for playing background music and voice. By using EOVS (Epson Own Voice format) Voice/Audio data can be reduced to ¼ or 1/3 of size compared to common ADPCM codec. EOVS is a high compression voice decoding algorithm with high sound quality. Voice speed and pitch conversion is supported by hardware while ESPER2 Voice Data Creation PC Tool allows to import existing WAV format files used by customers.

Epson bundle ESPER2 Voice Data Creation PC Tool with evaluation boards and provide licenses for ESPER2 free of charge to customers using S1C31D50 microcontroller and S1V3G340 speech IC.

Epson is committed to helping its customers improve the performance of their products with solutions that leverage Epson's efficient, compact, and precision technologies.

Key product features

1. A dedicated hardware processor executes following functions independently to save CPU resources:
 - Sound play processing
 - 2-channel mixing sound (for playing background music + voice)
 - Voice speed conversion (playback speed adjustable in 5% increments between 75% and 125%)
 - Sampling rate of 15.625 kHz is sufficient for background music as well as for voice.
 - High-compression voice decoding algorithm with high sound quality
 - (16/24/32/40 kbps)
 - Self-memory check function
 - Built-in RAM (R/W check, MARCH-C START)
 - Built-in Flash checksum, CRC
 - External QSPI-Flash checksum, CRC
 - Simple hardware processor interface
 - Just setting functions and commands in a register and start hardware processor
2. Very easy to add later voice/audio data
 - It is easy to add voice/audio data just by writing sound data and sentence information
3. Development environment ESPER2 Voice Data Creation PC Tool
 - Studio recording is not required. Only PC based tool (ESPER2) is necessary to create all sound data (12 languages are supported now)
 - All sound data assigned a number in PC tool and can be played back by specifying the assigned number in a hardware processor register. So there is no need to create and evaluate codes for linking sound data, etc.
 - a) ESPER2 tool generates high-quality voice data from text. *1
 - Using extensive dictionary and ability to analyze text and generate pronunciation.
 - A pronunciation editing function is provided for coined words, product names and other words that are not in the dictionary.
 - Female voice is supported for each language, but voice speed and pitch are adjustable. *2
 - b) Existing voice and melody data can be used
 - Existing WAV format sound files (16kHz sampling rate, monaural format) already used by customers can easily imported into ESPER2 tool.
 - Imported WAV format sound files can also be connected to voice data generated by ESPERII tool.
 - c) Basic phrase settings can be arranged automatically
 - By inserting a common slash (/) in basic phrases memory capacity can be saved. ESPERII tool recognizes these phrases and set up automatically everything including connection information
 - Example)
 - Number 1: "The temperature/is 38 degrees."
 - Number 2: "The temperature/is 39 degrees."
 - Number 3: "The temperature/is 40 degrees."
 - Generated voice data: "The temperature" "is 38 degrees", "is 39 degrees", "is 40 degrees."
 - d) ESPER2 tool specifications are compatible with microcontroller and speech IC to enable output of voice playback control information
 - S1C31D50: Control information is added to output sound ROM data, enabling voice playback just by specifying number in ESPER2 tool in the microcontroller.
 - S1V3G340: ESPER2 tool output playback commands including connection information and enable just control from the microcontroller and voice playback.
 - e) Speech creation list output
 - A speech generation list in ESPER2 tool can be download to an Excel file (CSV format)
 - Text in an Excel file can be copied and pasted into the tool.

In future Epson plan to provide also simple sound effects and a library that can produce high-quality audio data with small data sizes for units such as monetary values, weights and dates.

Product specifications

Compatible ICs	S1C31D50 and S1V3G340
Compatible OS	Windows 7, 8.1 and 10
Supported languages	America American English, American Spanish, Canadian French
	Europe British English, French, German, Italian, Russian, Spanish
	Asia Chinese, Japanese, Korean
Importing voice and melody data	WAV files can be imported into the tool (16kHz sampling rate, monoaural format)
Speaker	Female (one speaker) Voice pitch (high/low) and speed are adjustable

*1 There is no translation function. Text for a supported language is entered in that language.

*2 The speaker (voice) is different for each language.

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Epson is a global technology leader dedicated to becoming indispensable to society by connecting people, things and information with its original efficient, compact and precision technologies. The company is focused on driving innovations and exceeding customer expectations in inkjet, visual communications, wearables and robotics. Epson is proud of its contributions to realizing a sustainable society and its ongoing efforts to realizing the United Nations' Sustainable Development Goals.

Led by the Japan-based Seiko Epson Corporation, the worldwide Epson Group generates annual sales of more than US\$10 billion. global.epson.com/

About Epson Europe Electronics GmbH

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